

ABSTRACT

Methods for the production of substrate, tuber, and grain compositions containing isomalto-oligosaccharides are described. The methods comprise (a) contacting a substrate, tuber or grain containing ungelatinized starch with a maltogenic enzyme and a starch liquefying enzyme to produce maltose; (b) contacting said maltose with a transglucosidic enzyme, wherein said steps (a) and step (b) occur at a temperature less than or at a starch gelatinization temperature; and (c) obtaining a substrate, grain or tuber composition having an enzymatically produced isomalto-oligosaccharide, wherein the oligosaccharide is derived from the grain. The maltogenic enzyme can be either exogenous or endogenous to the grain. The contacting steps can be sequential or concurrent. The present invention also describes flour, oral rehydrating solutions, beer adjuncts, food, feed, beverage additives incorporating the grain compositions made as described.